PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 58023WO003	FOR FURTHER ACTION	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/US 03/38488	International filing date *(day/month/year)* 04.12.2003	Priority date *(day/month/year)* 23.12.2002
International Patent Classification (IPC) or both national classification and IPC C09J7/02		
Applicant 3M INNOVATIVE PROPERTIES COMPANY et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 11 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the opinion
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
14.06.2004	16.02.2005
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Otegui Rebollo, J Telephone No. +49 89 2399-8670

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/US 03/38488

I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:

Description, Pages

1-7, 11-22, 25-37	as originally filed
8, 9, 10, 10a, 23, 24	received on 16.12.2004 with letter of 16.12.2004

Claims, Numbers

1-29	received on 16.12.2004 with letter of 16.12.2004

Drawings, Sheets

1/1	as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).

   ☐ the language of publication of the international application (under Rule 48.3(b)).

   ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   ☐ contained in the international application in written form.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority in written form.

   ☐ furnished subsequently to this Authority in computer readable form.

   ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

   ☐ the description, pages:

   ☐ the claims, Nos.:

   ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

   (Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	22-29
	No:	Claims	1-21
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-29
Industrial applicability (IA)	Yes:	Claims	1-29
	No:	Claims	

2. Citations and explanations

see separate sheet

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

D1 = EP-A- 114 724
D2 = EP-A- 570 160
D3 = WO-A- 01/83210
D4 = FR-A- 2 607 054
D5 = EP-A- 454 508
D6 = US-A- 5 194 480
D7 = WO-A- 97/05206

1. The subject-matter of claims 1 to 21 of the present application appears to be novelty anticipated (Article 33(2) PCT) by the thermally conductive compositions, and their shaped forms like films, disclosed in documents D1 to D6 (see passages cited in the search report). Note also that during melt processing the melt viscosity of the polymers may be substantially reduced (see for instance example 1 of D4) so that even if before processing a polymer or polymer mixture has a melt flow index below 10 g/10 min, just before the final step of moulding said polymer or polymer mixture may have melt flow indices well above 10 g/10 min. Therefore, the melt index of the polymers in the precursor is not necessarily the same as the melt index of the starting materials used. It is further pointed out that the teachings of a document are not limited to its examples but encompass all the embodiments of the prior art disclosed therein, which is made available to the skilled person.

2. The subject-matter of claims 22 to 29 of the present application appears to derive in an obvious manner from the usual shaped forms, like for instance films, of the compositions disclosed in D1 to D5 and their normal uses like film backings as disclosed in D7 (see passages cited in the search report). Such routine activities of the skilled person do not usually involve an inventive step (Article 33(3) PCT). It is further pointed out that it stands to reason that if highly filled compounds are whished the binders would have to show low melt viscosity (high melt-flow indexes) in order to assure processing fluidity. Furthermore, what can be argued to be the decisive parameter in performing the invention is not so much the melting index of the polymers but the melt index of the precursor itself. Therefore, it is doubtful that a precursor

comprising, for instance, 90 wt-% filler and 10 wt-% polymer, may solve the technical problem underlying the invention (see page 3, lines 3 to 11). Furthermore, the examples of the application (see for instance table 4 on page 34) do not provide any conclusive evidence that any particular technical problem has been solved in the claimed melt index 10 - 100 g/10 min because the melt index of the comparative examples (7) is much nearer to the lower claimed limit (10) than that of the examples according to the invention (40). Furthermore, comparative examples 7 to 9 clearly fall within the scope claim 1 of the application. The same applies to comparative example 4, which may be cross-linked by high energy radiation (eg γ-radiation, see claims 16 to 18 of the application).

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